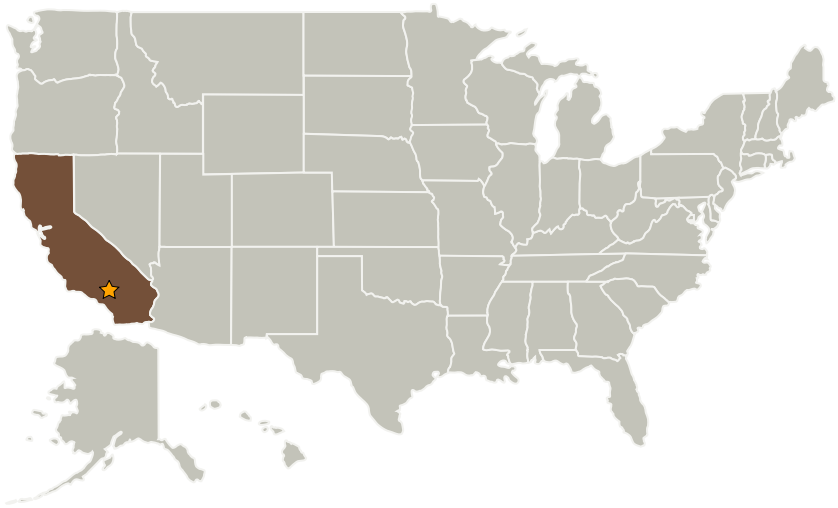
Aircraft Nodal Data Acquisition System (ANDAS), Phase II

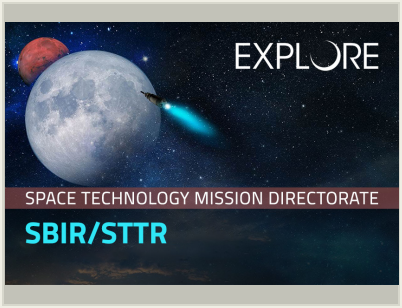
Completed Technology Project (2009 - 2011)

Project Introduction

Development of an Aircraft Nodal Data Acquisition System (ANDAS) based upon the short haul Zigbee networking standard is proposed. It employs a very thin (135 um) hybrid microminiature sensor assembly (MSA) and a host module with USB interface. At several nodes on the aircarft, MSAs are cemented for measurement. They transmit the measured data to the host module plugged into a PC. The MSA incorporates an integrated sensor (capable of measuring pressure, temperature, acceleration and surface strains), a microcontroller, a Zigbee transceiver and a battery for power. The host module incorporates a microcontroller and a Zigbee transceiver. In Phase I these modules were designed after trade-off analyses and experimental evaluation of the sensors and networking hardware. Based upon the design, the PCB packages for the MSA and the host module were built for initial characterization and testing during Phase II. In this phase the MSA design would be refined as a cement-and-forget-device (except for the battery).

Primary U.S. Work Locations and Key Partners





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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Armstrong Flight Research Center (AFRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Armstrong Flight Research Center(AFRC)	Lead Organization	NASA Center	Edwards, California
Waddan Systems	Supporting Organization	Industry Minority-Owned Business	Northridge, California

Primary U.S. Work Locations
California

Project Transitions

February 2009: Project Start

February 2011: Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.2 Structures
    - TX12.2.4 Tests, Tools and Methods